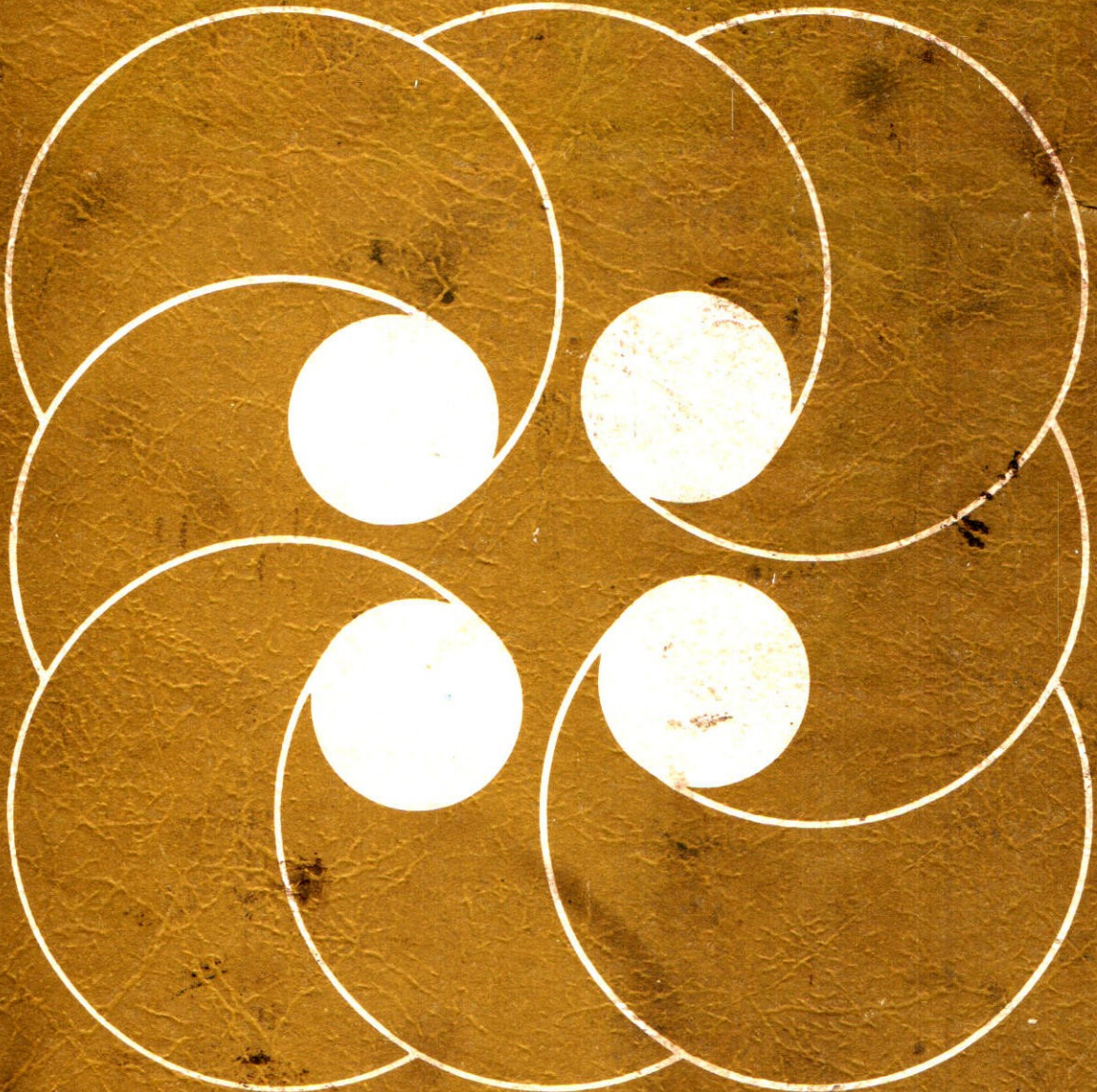




1978 Car Shop Manual Volume 2 Engine





DETROIT
IRON

IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual doing the work. This Shop Manual provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this Manual must first establish that he compromises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

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This 1978 Car Shop Manual has been prepared to provide information covering normal service repairs and maintenance for 1978 Ford Passenger Cars manufactured in the United States and Canada. It is divided into five volumes, each covering a specific major area:

- Volume 1 — Chassis
- Volume 2 — Engine
- Volume 3 — Electrical
- Volume 4 — Body
- Volume 5 — Maintenance and Lubrication.

Information in each volume is divided into Groups covering a general system. The table of contents on the cover of each volume indicates the Group title, number, and volume in which each Group is located.

For 1978, the basic part number for components covered in the Groups is also included in parenthesis after the Group number.

Example:

<u>Cooling System</u>	<u>Group 27</u>	<u>(8000)</u>
General System Covered in Group	Group Number	Basic Part Number for Cooling System Components

Some components covered within a Group do not have the same basic part number. In these cases, more than one part number will appear on the Group index.

Example:

<u>Gasoline Engines</u>	<u>Group 21</u>	<u>(6000</u>	<u>&</u>	<u>9000)</u>
General System Covered in Group		Basic Part Number for Gasoline Engine Components		Intake and Exhaust Manifold Basic Part Number Only

For easy reference, information in each Group has been divided into smaller units or Parts. There is one Part for each component in the system, as well as a General Service Part in some Groups to cover procedures common to several components within the Group. In general, each Part contains the Description, Operation, Diagnosis and Testing, Removal and Installation and Disassembly and Assembly procedures for the component covered in the Part. Diagnosis Charts are also included in some Parts to help you systematically locate and service conditions encountered. In most cases, specifications are included at the end of each Part.

To aid in locating specific items in this manual, the index at the front of each volume provides an alphabetical listing, with page number, for all Parts in the volume. The tab locator on the right side of this index will help you find the first page of each Group.

On the first page of each Group there is an index listing the Part title and Part number for each component covered within the Group. The first page of each Part contains an index to locate service operations covered in that Part. This Group-Part breakdown is also indicated in the page number located at the top of each page.

Example: 11-02-21 = (Group) 11 — (Part) 02 — (Page) 21

Metric conversion tables have been included at the back of each volume to aid in converting specifications in this manual to the metric equivalent.

The descriptions and specifications in this manual were in effect at the time this manual was approved for printing. Ford Motor Company reserves the right to discontinue models at any time, or change specifications or design without notice and without incurring obligation.



**Ford Parts and Service Division
Training and Publications Department**

VEHICLE IDENTIFICATION

GROUP
20

Vehicle Identification

PART
20-01

8S63H100001

(VEHICLE IDENTIFICATION NUMBER)

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 08/77 GYWR 6538
GAWR: FRONT 2964, REAR 3375

THIS VEHICLE CONFORMS TO ALL
APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY STANDARDS IN
EFFECT ON THE DATE OF MANU-
FACTURE SHOWN ABOVE.

F0033 R0155

8S63H100001

PASSENGER

VEH. IDENT. NO.	TYPE
BODY COLOR TRIM TRANS. AXLE DSO	
53M IC-YA DD X 6 48	

(UNITED STATES)

- ① CONSECUTIVE UNIT NO.**
- ② BODY SERIAL CODE
- ③ MODEL YEAR CODE
- ④ ASSEMBLY PLANT CODE
- ⑤ BODY TYPE CODE
- ⑥ ENGINE CODE
- ⑦ BODY COLOR CODE
- ⑧ VINYL ROOF TYPE/COLOR
- ⑨ TRIM CODE (First Letter = Type of Trim; Second Letter = Color)
- ⑩ TRANSMISSION CODE
- ⑪ REAR AXLE CODE
- ⑫ DISTRICT - SPECIAL EQUIPMENT
- ⑬ VEHICLE TYPE*
- ⑭ ACCESSORY RESERVE LOAD

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 08/77 GYWR 5892
GAWR: FRONT 2964 REAR 2928

THIS VEHICLE MANUFACTURED FOR
EXPORT ONLY ON DATE
SHOWN ABOVE.

8S63H100002 PASSENGER

VEH. IDENT. NO.	TYPE
53H IC-CA D X 6 90	

(EXPORT)

MFD. BY FORD MOTOR CO.
OF CANADA LTD.

THIS VEHICLE CONFORMS TO
ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY STANDARDS IN
EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE

VEH. IDENT. NO.	TYPE
BODY COLOR TRIM TRANS. AXLE DSO	
	MADE IN CANADA

(CANADA)

*1978 BUILD MODELS DESIGNATED 1977 MODELS WILL HAVE "PASS 1977"
IN THIS SPACE.

**1978 BUILD MODELS DESIGNATED 1977 MODELS WILL HAVE ALTERED
CONSECUTIVE NUMBERING AS FOLLOWS:

PINTO/MUSTANG II - 400001 THRU 499999

BOBCAT - 750001 THRU 799999



GENERAL DESCRIPTION

OFFICIAL VEHICLE IDENTIFICATION NUMBER

The official Vehicle Identification Number (VIN) (Fig. 1) for title and registration purposes is stamped on a metal tab that is fastened to the instrument panel close to the windshield on the driver's side of the car and is visible from outside.

VEHICLE CERTIFICATION LABEL

The Vehicle Certification Label (V.C. Label) (Fig. 1) is affixed on the left front door lock face panel or door pillar. The upper half of the label contains the name of manufacturer, month and year of manufacture, Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating (GAWR), and the certification statement.

The V.C. label also contains the Vehicle Identification Number. This number is also used for warranty identification of the vehicle. The first number indicates the model year. The letter following the model year number indicates the manufacturing assembly plant. The next two numbers designate the Body Serial Code followed by a letter expressing the Engine Code.

The last six digits of the Vehicle Identification Number indicate the Consecutive Unit Number of each unit built at each assembly plant. The Consecutive Unit Numbers begin as follows:

100,001—Ford, LTD II, Ranchero, Mustang II, Thunderbird, Granada, Fairmont and Pinto.

500,001—Mercury, Cougar, Zephyr, Monarch and Mercury Bobcat.

800,001—Lincoln Continental and Continental Mark V.

The remaining information on the V.C. Label consists of the following vehicle identification codes:

The BODY code is two numerals and a letter identifying the body style.

The COL (color) code is a number and letter indicating the exterior paint color code and vinyl roof type and color (if equipped).

The TRIM code consists of a two-letter or a letter-number combination designating the interior trim.

The AXLE code is a number or letter indicating the rear axle ratio and standard or locking type axles.

The TRNS. code is a number or letter indicating the type of transmission.

The DSO code, consisting of two numbers, designates the district in which the car was ordered and may appear in conjunction with a Domestic Special Order or Foreign Special Order number when applicable. Ford of Canada DSO codes consist of a letter and number.

The following charts provide the various codes and their respective identification:

IDENTIFICATION CODES

ASSEMBLY PLANT CODES

Code Letter	District
A	Atlanta
B	Oakville (Canada)
E	Mahwah
F	Dearborn
G	Chicago
H	Lorain
J	Los Angeles
K	Kansas City
P	Twin Cities
R	San Jose
S	Allen Park (Pilot)
T	Metuchen
U	Louisville
W	Wayne
X	St. Thomas
Y	Wixom
Z	St. Louis

ENGINE CODES

Codes	No. of Cyls.	Displacement Litres	CID
A	8	7.5	460-4V
C	8	7.5	460-4V (Police Interceptor)
F	8	5.0	302-2V
H	8	5.8	351-2V
L	6	4.1	250-1V
S	8	6.6	400-2V
T	6	3.3	200-1V
Y	4	2.3	139-2V (2.3L)
Z	6	2.8	169-2V (2.8L)

TRANSMISSION CODES

Codes	Type
1	MANUAL
5	3 Speed
6	4 Speed Overdrive
7	4 Speed @
	4 Speed (b)
V	AUTOMATIC
W	XP (C-3)
X	XP (C-4)
U	FMX
Z	XPL (C-6)
	XPL (Special)
@ Borg-Warner (b) Hummer	

EXTERIOR PAINT COLOR CODES

Code	Ref. #	Color
1C	1724	Black
1G	5299	Silver Met.
1N	5476	Dove Gray
1P	5523	Med. Gray Met. (Two Tone only)
1Q	5527	Med. Silver Met.
2M	3413	Dark Red
2R	5440	Br. Red
2U	5455	Lipsick Red
3G	5094	Br. Dk. Blue Met.
3U	5467	Lt. Blue
31	5499	Midnight Blue
34	5041	Med. Blue
46	5328	Dk. Jade Met.
47	5404	Lt. Green
4V	5233	Dk. Yellow Green Met.
5Q	5477	Dk. Brown Met.
6E	5080	Br. Yellow
6P	5406	Cream
6U	5441	Lt. Tan

DISTRICT CODES
LINCOLN-MERCURY

Code	District
00	Special
11	Boston
15	New York
16	Philadelphia
17	Washington
21	Atlanta
22	Dallas
23	Jacksonville
26	Memphis
31	Buffalo
32	Cincinnati
33	Cleveland
34	Detroit
41	Chicago
42	St. Louis
46	Twin Cities
51	Denver
52	Los Angeles
53	Oakland
54	Seattle
84	Home Off. Reserve
90's	Export

FORD OF CANADA

Mercury Code	Region	Ford Code
A1	Central	B1
A2	Eastern	B2
A3	Atlantic	B3
A4	Midwestern	B4
A6	Western	B6
A7	Pacific	B7
12	Export	12

REAR AXLE RATIO CODES

Conventional Lock		Ratio
Y		3.08
B		2.47
1	J	2.50
8		2.73
2		2.75
3		2.79
6	Ø	3.00
4		3.18
7		3.40

DISTRICT CODES
FORD

Code	District
00	Special
11	Boston
12	Buffalo
13	New York
14	Pittsburgh
15	Newark
16	Philadelphia
17	Washington
21	Atlanta
22	Charlotte
23	Memphis
24	Jacksonville
25	Richmond
26	New Orleans
28	Louisville
41	Chicago
42	Cleveland
43	Milwaukee
45	Lansing
46	Indianapolis
47	Cincinnati
48	Detroit
52	Dallas
53	Kansas City
54	Omaha
55	St. Louis
56	Davenport
57	Houston
58	Twin Cities
71	Los Angeles
72	San Jose
73	Salt Lake City
74	Seattle
75	Phoenix
76	Denver
83	Government
84	Home Off. Reserve
85	American Red Cross
86	Recreational Veh. Pool
87	Body Company
89	Transportation Services
90's	Export

BODY SERIAL AND STYLE CODES

Vehicle	Body Serial Code	Body Style Code	Body Type	Model
PINTO	10	62B	2-Dr. Sedan	Base
	11	64B	3-Dr. Sedan	Base
	12	73B	Wagon	Base
BOBCAT	20	64H	3-Dr. Sedan	U.S.A. & Canada
	22	73H	Wagon	U.S.A. & Canada
	23	62B	2-Dr. Sedan	Canada Only
	24	64B	3-Dr. Sedan	Canada Only
	25	73B	Wagon	Canada Only
MUSTANG II	02	60F	2-Dr.	Base
	03	69F	3-Dr.	Base
	04	80H	2-Dr.	Ghia
	05	69R	3-Dr.	Mach I
GRANADA	82	54H	4-Dr. Sedan	Base
	81	66H	2-Dr. Sedan	Base
MONARCH	34	54H	4-Dr. Sedan	Base
	33	66H	2-Dr. Sedan	Base
VERSAILLES	84	54M	4-Dr. Sedan	Base
LTD II	25	65B	2-Dr. Hardtop	LTD II S
	27	53B	4-Dr. Pillar Hardtop	LTD II S
	30	65D	2-Dr. Hardtop	LTD II
	31	53D	4-Dr. Pillar Hardtop	LTD II
	43	71K	LTD II Squire	Wagon
	47	97D	500	LTD II
	48	97R	GT	Ranchero
	49	97K	Squire	
FAIRMONT	92	54B	4-Dr. Sedan	Base
	91	66B	2-Dr. Sedan	Base
	93	66R	2-Dr. Sedan	Sport Coupe
	94	74B	Wagon	

Vehicle	Body Serial Code	Body Style Code	Body Type	Model
COUGAR	92	53D	4-Dr. Pillar Hardtop	Cougar
	91	65D	2-Dr. Hardtop	Cougar
	93	65L	2-Dr. Hardtop	Cougar XR-7
THUNDERBIRD	87	60H	2-Dr. Pillar Hardtop	Base
FORD	52	60D*	2-Dr. Pillar Hardtop	Custom 500
	53	53D	4-Dr. Pillar Hardtop	Custom 500
	82	80H	2-Dr. Pillar Hardtop	LTD
	63	53H	4-Dr. Pillar Hardtop	LTD
	64	53L	4-Dr. Pillar Hardtop	LTD Landau
	65	60L	2-Dr. Pillar Hardtop	LTD Landau
	72	71D	Custom 500/LTD II	Wagon
	74	71H	LTD	Wagon
MERCURY	62	53H	4-Dr. Pillar Hardtop	Marquis (FLD)
	61	65H	2-Dr. Hardtop	Canada Only
	66	53L	4-Dr. Pillar Hardtop	Grand Marquis
	65	65L	2-Dr. Hardtop	Grand Marquis
	64	53K	4-Dr. Pillar Hardtop	Marquis Brougham
	63	65K	2-Dr. Hardtop	Marquis Brougham
	74	71K	Marquis**	Wagon
CONTINENTAL MARK V	89	65D	2-Dr. Hardtop	Base
LINCOLN CONTINENTAL	81	60B	2-Dr. Pillar Hardtop	Base
	82	53B	4-Dr. Pillar Hardtop	Base
ZEPHYR	32	54D	4-Dr. Sedan	Base
	31	66D	2-Dr. Sedan	Base
	35	36R	2-Dr. Sedan	Sport Coupe
	36	74D	Wagon	

CY1615-2E

VINYL ROOF TYPE AND COLOR IDENTIFICATION

Code	Vinyl Type	Code	Vinyl Type	Code	Vinyl Color	Code	Vinyl Color
W	Lugano Full	Z	Valino Front Half	A	Black	F	Cordovan
X	Lugano Half	T	Valino Coach	B	Blue, Medium	K	Cordovan, Light
K	Lugano Front Half	B	Crosshatch Full	S	Blue, Midnight		Gold, Galveston
M	Lugano Coach	R	Crosshatch Half	5	Blue, Wedgewood	E	Gray, Dove
D	Milano Full	S	Levant Full	T	Brown, Dark	R	Jade, Dark
E	Milano Half	E	Levant Half Rear (Mustang Dev.)	V	Camel, Lt.	M	Jade, Light
F	Milano Halo			Y	Camel, Medium	4	Jade, Medium
Q	Cayman Full	G	Odense Full	U	Chamois	3	Jade, Wedgewood
U	Cayman Half	N	Odense Half	6	Champagne, Light	D	Red/Russet
V	Valino Full	A	Odense Front Half	J	Champagne, Midnight	P	Silver
Y	Valino Half					W	White

When a Vinyl Roof is installed the type and color codes will be reflected after the two digit Exterior Paint Color Code.

Example: Code - 1CYA = 1C-Black Car, YA-Valino Black Half Roof.

CY1615-2E1

GASOLINE ENGINES

GROUP
21
(6000)

PART TITLE	PART NO.	PART TITLE	PART NO.
General Gasoline Engine Service	21-01	5.0L/5.8L (302/351W CID) V-8 Engines	21-21
2.3L I-4 Engine	21-05	5.8L/6.6L (351M/400 CID) V-8 Engines	21-22
3.3L/4.1L (200/250 CID) I-6 Engines	21-10	7.5L (460 CID) Passenger Police Interceptor V-8 Engine	21-24
2.8L V-6 Engine	21-12		

CA4181-2B

General Gasoline Engine Service

PART
21-01

SUBJECT	PAGE	SUBJECT	PAGE
GENERAL INFORMATION		REMOVAL AND INSTALLATION	
Engine Identification	01-2	Core Plugs	01-12
DIAGNOSIS AND TESTING		Crankshaft Rear Oil Seal	01-13
Camshaft End Play	01-8	Flywheel Ring Gear — Manual Shift Transmission	01-13
Camshaft Lobe Lift	01-5	Rocker Arm Stud Replacement — 5.0L/5.8L (302/351W CID) V-8	01-12
Compression Test	01-5	OVERHAUL	
Crankshaft End Play	01-9	Camshaft Repair	01-18
Flywheel Clutch Face Runout — Manual Shift Transmissions	01-10	Cleaning and Inspection	01-20
Flywheel Runout — Automatic Transmissions	01-10	Crankshaft	01-19
Hydraulic Valve Tappet and Hydraulic Lash Adjuster	01-6	Cylinder Block	01-19
Positive Closed-Type Crankcase Ventilation System	01-5	Cylinder Head	01-16
Timing Chain Deflection	01-9	Fitting Main or Connecting Rod Bearings	01-19
Timing Gear Backlash — 2.8L V-6 Engine	01-8	Interpretation of "Service Limit" Specifications	01-16
Timing Gear Runout	01-8	Pistons, Pins and Rings	01-18
ADJUSTMENTS		Valves	01-17
Hydraulic Valve Clearance — Except 2.3L I-4 and 2.8L V-6 Engines	01-11	SPECIAL SERVICE TOOLS	01-27

CA4182-2B

GENERAL INFORMATION

All engines incorporate a closed-type crankcase ventilation system and exhaust emission control system. All engine emission control systems are covered in detail in Group 29 (Diagnosis) and Volume 5 (Maintenance).

To maintain the required exhaust emission levels, the fuel system, ignition system and engine must be kept in good operating condition and meet recommended adjustment specifications.

When performing tests, adjustments or repairs to the engine, ignition system or fuel system, it is essential to follow the procedures and specifications in Groups 21, 23, 24 and 29 of this Manual.

Before replacing damaged or worn engine components such as the crankshaft, cylinder heads, valve guides, valves, camshafts or cylinder block, be sure the part(s) are not repairable.

The following sections cover various engine tests, adjustment and repair procedures. In addition, the cleaning and inspection procedures are covered. Engine assembly and repair specifications are at the end of each specific Part.

For engine removal, disassembly, assembly, installation and adjustment procedures, refer to the pertinent Part of this Group.

CAUTION: Do not operate the engine with the hood open until the fan has been first examined for possible cracks and separation.

ENGINE IDENTIFICATION

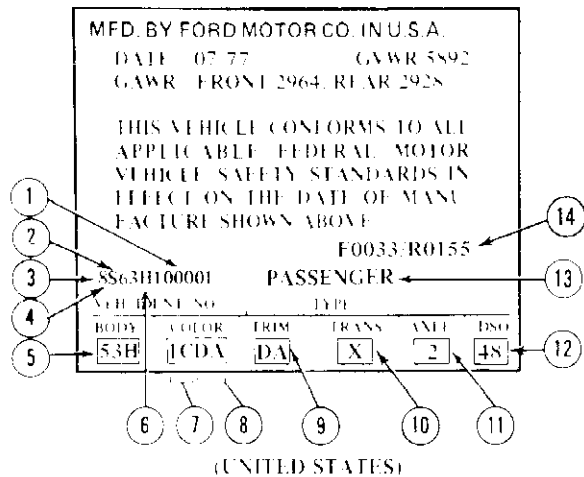
For quick engine identification, refer to the Safety Certification Decal shown in Fig. 1. The decal is mounted on the left front door lock face panel. Find the engine code (letter or number) on the decal, then refer to the engine identification chart to determine the engine type and size. An engine identification label is also attached to the engine. The symbol code on the identification tag (Fig. 2) identifies each engine for determining parts usage; for instance, engine cubic inch displacement and model year.

The change level and engine code number determine if parts are unique to specific engines. The engine plant codes designate where engines were built. It is imperative that the codes on the engine identification label be used when ordering parts or making inquiries about the engine. The pertinent codes are shown in the master parts catalog to designate unique parts.

F 8S63H100001 *F*

(VEHICLE IDENTIFICATION NUMBER)

SAFETY CERTIFICATION DECAL (TYPICAL)



- ① CONSECUTIVE UNIT NO.
- ② BODY SERIAL CODE
- ③ MODEL YEAR CODE
- ④ ASSEMBLY PLANT CODE
- ⑤ BODY TYPE CODE
- ⑥ ENGINE CODE
- ⑦ BODY COLOR CODE
- ⑧ VINYL ROOF TYPE/COLOR
- ⑨ TRIM CODE (FIRST LETTER)
- ⑩ TRIM CODE (SECOND LETTER)
- ⑪ TRANSMISSION CODE
- ⑫ REAR AXLE CODE
- ⑬ DISTRICT - SPECIAL EQUIPMENT
- ⑭ VEHICLE TYPE*
- ⑮ ACCESSORY RESERVE LOAD

*1978 Build Models Designated 1977 Models will have "PASS 1977" in this space.

**1978 Build Models Designated 1977 Models will have altered consecutive numbering as follows.

PINTO/MUSTANG II 400001 thru 499999

BOBCAT - 750001 thru 799999

CODE	FORD		LTD II/ COUGAR/ RANCHERO		PINTO/ BOBCAT		GRANADA/ MONARCH		MUSTANG		MERCURY		FAIR- MONT/ ZEPHYR		THUNDER- BIRD		LINCOLN CONTI- NENTAL, MARK V	
	Low Comp. Export	ENGINES	Cyl.	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.	Low Comp. Export	Conv.
Y		2.3L	4						Y				Y					
Z		2.8L	6						Z									
T		3.3L (200 CID)	6										T					
L		4.1L (250 CID)	6						L	3								
F		5.0L (302 CID)	8		F			F	F				F					
H		5.8L (351-W CID)	8		H			H										
Q		5.8L (351-M CID)	8	Q	Q													
S		6.6L (400 CID)	8	S	S						S				S		S	
A		7.5L (460 CID)	8	A							A						A	
C		7.5L (460 CID) Police Interceptor	8	C							C							

A3688-2G

FIG. 1 Engine Identification

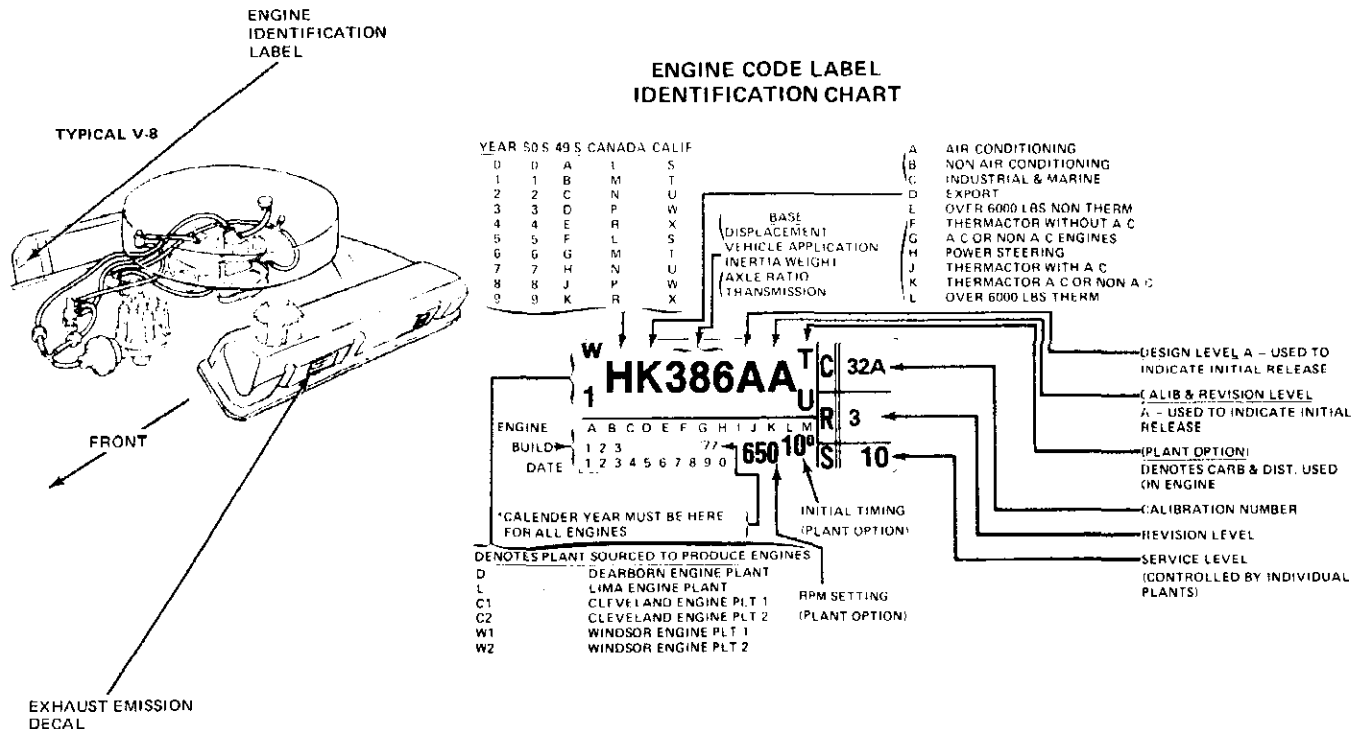


FIG. 2 Engine Identification Label

CA1202-2B

DIAGNOSIS AND TESTING

POSITIVE CLOSED-TYPE CRANKCASE VENTILATION SYSTEM

All emission system related components testing and diagnosis is covered in Part 29-02, Light Duty Engine Diagnosis and Testing.

COMPRESSION TEST

Compression Gauge Check

1. Be sure the oil in the crankcase is at the proper level and the battery is properly charged. Operate the vehicle until the engine is at normal operating temperature. Turn the ignition switch off; then remove all the spark plugs.
2. Set the carburetor throttle plates and choke plate in the wide open position.
3. Install a compression gauge in No. 1 cylinder.
4. Install an auxiliary starter switch in the starting circuit. With the ignition switch off, and using the auxiliary starter switch, crank the engine at least five compression strokes and record the highest reading.

Note the approximate number of compression strokes required to obtain the highest reading.

5. Repeat the test on each cylinder as was required to obtain the highest reading on the No. 1 cylinder.

Test Conclusion

The indicated compression pressures are considered within specification if the lowest reading cylinder is within 75 percent of the highest. (See the percentage chart given in Fig. 3.)

If one, or more cylinders read low, squirt approximately one (1) tablespoon of engine oil on top of the pistons in the low reading cylinders. Repeat compression pressure check on these cylinders.

1. If compression improves considerably, the piston rings are at fault.
2. If compression does not improve, valves are sticking or seating poorly.
3. If two adjacent cylinders indicate low compression pressures and squirting oil on the pistons does not increase the compression, the cause may be a cylinder head gasket leak between the cylinders.

Engine oil and/or coolant in the cylinders could result from this problem.

It is recommended the following quick reference chart (Fig. 3) be used when checking cylinder compression pressures. The chart has been calculated so that the lowest reading number is 75 percent of the highest reading.

Example

If, after checking the compression pressures in all cylinders, it was found that the highest reading obtained was 196 psi and the lowest pressure reading was 155 psi, the engine is within specifications and the compression is considered satisfactory.

CAMSHAFT LOBE LIFT

All Except 2.3L I-4 Engine

Check the lift of each lobe in consecutive order and make a note of the readings.

1. Remove the air cleaner and the valve rocker arm cover(s).
2. On the rocker shaft mounted rocker arms, remove the valve rocker arm shaft(s) assembly as detailed in the pertinent part.

Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI
134	101	174	131	214	160
136	102	176	132	216	162
138	104	178	133	218	163
140	105	180	135	220	165
142	107	182	136	222	166
144	108	184	138	224	168
146	110	186	140	226	169
148	111	188	141	228	171
150	113	190	142	230	172
152	114	192	144	232	174
154	115	194	145	234	175
156	117	196	147	236	177
158	118	198	148	238	178
160	120	200	150	240	180
162	121	202	151	242	181
164	123	204	153	244	183
166	124	206	154	246	184
168	126	208	156	248	186
170	127	210	157	250	187
172	129	212	158		

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FIG. 3 Quick Reference Compression Pressure Limit Chart

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